WHAT IS CLAIMED IS:

1. An apparatus for positioning a mobile station in a TDMA communication system, comprising:

a plurality of power detectors, respectively located in a plurality of predetermined positions, for respectively measuring a plurality of power values of the signal generated by the mobile station in a preset channel and a preset time slot; and

at least one controller, coupled to the power detectors, for identifying the mobile station according to the preset channel and the preset time slot, and determining the position of the mobile station according to at least one of the measured power values and the position of the corresponding detector.

2. The apparatus of Claim 1, wherein the at least one controller is located on a base station of the TDMA communication system.

3. The apparatus of Claim 1, wherein the at least one controller determines the position of the mobile station according to the position of the detector that has the maximum power value among the plurality of power values measured by the plurality of power detectors.

4. The apparatus of Claim 1, wherein the at least one controller determines the position of the mobile station according to a three-point positioning technique using the power values measured by at least three of the plurality of

power detectors and the positions of the corresponding at least three power detectors.

5. The apparatus of Claim 4, wherein the power values measured by the plurality of power detectors are corrected by a predetermined weight according to their relative position to an obstacle.

6. The apparatus of Claim 1, wherein the at least one controller further includes a look-up table recording the relationship between all known positions of the mobile station and the measured power values for each power detector corresponding to each location, wherein the position of the mobile station is determined by comparing the look-up table with the plurality of power values measured by the plurality of power detectors.

7. The apparatus of Claim 1, wherein the plurality of power detectors are connected to the at least one controller by a wireless path.

8. The apparatus of Claim 1, wherein the plurality of power detectors perform the power measurement by using the communication signal between the mobile station and a base station of the TDMA communication system.

9. The apparatus of Claim 1, wherein the plurality of power detectors perform the power measurement by using the response signal from the mobile station when a base station of the TDMA communication system pages the mobile station.

10. The apparatus of Claim 1, wherein the at least one controller further transfers a time slot message signal to the plurality of power detectors for synchronizing the power measurement by the plurality of power detectors with the time slots allocated by the TDMA communication system.

11. The apparatus of Claim 1, wherein the power detectors are RF receivers for directly measuring the RF power.

12. A method of positioning a mobile station in a TDMA communication system, comprising the steps:

providing a plurality of power detectors respectively located at a plurality of predetermined positions;

respectively measuring a plurality of power values of the signal generated by the mobile station in a preset channel and a preset time slot;

identifying the mobile station according to the preset channel and the preset time slot; and

determining the position of the mobile station according to at least one of the measured power values and the position of the corresponding detector.

13. The processing method of Claim 12, wherein in the step of determining the position of the mobile station, the position of the mobile station is determined according to the position of the detector that has the maximum power value among the plurality of power values measured by the plurality of power detectors.

14. The processing method of Claim 12, wherein in the step of determining the position of the mobile station, the position of the mobile station is determined according to a three-point positioning technique using the power values measured by at least three of the plurality of power detectors and the positions of the corresponding at least three power detectors.

15. The processing method of Claim 14, wherein the power values measured by the plurality of power detectors are corrected by a predetermined weight according to their relative position to an obstacle.

16. The processing method of Claim 12, wherein in the step of determining the position of the mobile station, further comprising the steps:

providing a look-up table recording the relationship between all known positions of the mobile station and the measured power values for each power detector corresponding to each location; and

determining the position of the mobile station by comparing the look-up table with the plurality of power values measured by the plurality of power detectors.

17. The processing method of Claim 12, wherein in the step of measuring a plurality of power values of a signal generated by the mobile station, the plurality of power detectors perform the power measurement using the communication signal between the mobile station and a base station of the TDMA communication system.

18. The processing method of Claim 12, wherein in the step of measuring a plurality of power values of a signal generated by the mobile station further comprises the steps:

paging the mobile station from a base station of the TDMA communication system; and

performing the power measurement by using the response signal from the mobile station paged.